

DECLARATION of MICHAEL ST. DENIS

UPHE v. Diesel Power Gear et al., 2:17-cv-00032-RJS-DBP

I, Michael St. Denis, declare that the following statements are true and correct to the best of my knowledge.

1. I am the Principal of Revecorp, Inc. Revecorp is an engineering and data solutions firm based in Rocklin, California, specializing in vehicle testing and emissions control inspection program technologies. We are experts in vehicle inspection technology and vehicle information data systems. We have experience working with all of the major manufacturers of emissions inspection test equipment and vehicle emissions testing and vehicle emission control technologies in the U.S.

2. I have a Doctorate in Environmental Science and Engineering from UCLA, a Master of Science degree in Physical Chemistry, and a Bachelor of Science degree in Chemistry. From 1991 to 1993, I performed my doctoral research on the operation of vehicle emissions control systems and the US vehicle certification test (the Federal Test Procedure “FTP”) at Ford Motor Company. From 1993 to 1997, I worked for Parsons Corporation, where my responsibilities included serving as the technical manager for the California Bureau of Automotive Repair (“BAR”) Smog Check Referee Program. During my time at Parsons, I also managed emissions research programs for BAR and personally conducted the studies which led to the development of the current smog check program in California. Between 1998 and 2007 I was a Managing Partner at Sierra Research where I also managed work on vehicle emissions testing programs throughout the U.S. and vehicle emissions research. Since 2007 I have been the Principal of Revecorp which continues to specialize in in-use vehicle emissions control research and the related air quality impacts.

3. I am familiar with the mobile source testing protocols for determining compliance with federal emission standards.

4. In April of 2016 I was commissioned by attorney Reed Zars to facilitate and supervise the emissions testing of a 2013 6.7 liter diesel Ford F250 pickup truck, VIN No. 1FT7W2BT2DEA61696. I understand that one of the defendants in this action, B&W Auto LLC, doing business as Sparks Motors LLC, advertised and sold this truck with a “full DPF delete and H&S tune” (“Sparks Deleted Truck”). Defendants’ Responses to Requests for Documents, ¶ 8, item 12, and referenced EBay advertisement in Complaint, ¶ 151, **Attachment 1**.

5. The objective of the testing was to determine the emission rate of particulate matter (PM) and nitrogen oxides (NO_x) from the Sparks Deleted Truck, applying the federal test protocols used to demonstrate the truck’s original compliance with its applicable federal PM and NO_x emission standards.

6. Before Ford Motor Company (Ford) could lawfully sell the 2013 model year diesel F250 truck in the United States, Ford was required to obtain a Certificate of Conformity (“COC”) from the Environmental Protection Agency (EPA). To obtain a COC, Ford was required to demonstrate that this type and model year of truck, as designed with

the respective emissions controls in place, would meet federal emission standards over its useful life.

7. On August 21, 2012, Ford applied to EPA for a COC for this truck model ("test group"). **Attachment 2.** Ford's application states that the federal exhaust emission standard for particulate matter (PM) for the truck's test group is 0.02 grams per mile (g/mi.), and for oxides of nitrogen (NO_x) is 0.2 g/mi. Compliance with these standards is determined by the Federal Test Procedure (FTP).

The EPA certification and in-use exhaust emission standards applicable to this test group are:

Certification FTP Standards (g/mi)	Useful Life	NMHC	CO	NO _x	PM	HCHO
HDV (8,501-10,000 lb GVWR)	120K	0.195	7.3	0.2	0.02	0.032

Attachment 2, p. 1.

8. Ford's application identifies at least three emission control devices installed in the 2013 diesel Ford F250 that are employed to meet these standards: a Diesel Oxidation Catalyst (DOC), a Diesel Particulate Filter (DPF), and Selective Catalytic Reduction (SCR). **Attachment 2**, p. 3 of 13.

9. According to Ford's COC application, Ford demonstrated the F250's compliance with the emission standards above using the CVS 75, also known as the FTP. **Attachment 2**, p. 5 of 13. The FTP test monitors and records a vehicle's exhaust emissions over three drive cycles representing typical cold start, hot running and hot start driving. The results of the three drive cycles are combined to obtain a final result. The final result for PM emissions from Ford's representative 2013 diesel F250 truck was 0.004 g/mi., reflecting 20 percent of the allowable 0.02 g/mi. PM emission standard. The final result for NO_x emissions from Ford's representative 2013 diesel F250 truck was 0.12 g/mi., reflecting 60 percent of the allowable 0.2 g/mi. NO_x emission standard. **Attachment 2**, p. 6 of 13.

10. Based on the results of Ford's FTP test results, on October 15, 2012, EPA issued a COC to Ford to allow Ford to sell the 2013 model year diesel Ford F250 in the United States. **Attachment 3.**

11. On April 20th, 2016 I arranged to have the emissions from the Sparks Deleted Truck tested at the SGS Environmental Testing Center in Aurora, Colorado. SGS is an accredited laboratory in compliance with ISO 14001:2004 environmental management, and ISO 17025:2005 quality management for performing vehicle and engine emissions tests.

<http://www.sgsgroup.us.com/~media/Local/USA/Documents/Brochures/SGSAutomotiveETCBrochureEN2015SinglePage.p>

SGS performs certification testing for a variety of auto manufacturers and research for U.S. EPA and others.

12. A true and accurate picture of the Sparks Deleted Truck undergoing testing at the SGS Environmental Testing Center in May of 2016 is shown below. True and accurate SGS pre-test pictures of the underbody of the truck confirm that factory emissions control components in the exhaust system have been replaced by a “straight pipe.”

Attachment 4.



13. A true and accurate copy of the results of the FTP emission testing of the Sparks Deleted Truck from SGS are attached as **Attachment 5.**

14. A summary of the SGS testing of the Sparks Deleted Truck compared to the truck’s applicable federal emission standards is shown below:

Sparks Deleted Truck
SGS May 2016 Emission Testing Results Compared to Federal Emission Standards

Pollutant	Federal Emission Standard (grams per mile)	FTP Results (grams per mile)	% of Standard
NO _x	0.20	4.3211	2,160%
PM	0.02	0.0858	429%

15. The 2016 SGS FTP drive cycle test results show that NO_x emissions from the Sparks Deleted Truck were 2,160 percent of the federal NO_x standard of 0.2 g/mi., and that PM emissions were 429 percent of the federal PM standard of 0.02 g/mi.

16. A summary of the 2016 SGS testing results of the Sparks Deleted Truck compared to the actual emission rates measured during certification of this vehicle by Ford’s 2012 testing is shown below:

Sparks Deleted TruckFord 2012 Certification Emission Testing Results Compared to SGS 2016 Testing Results

Pollutant	Ford 2012 FTP Test Results (grams per mile)	SGS 2016 FTP Test Results (grams per mile)	% of Certified Emission Rate
NO _x	0.12	4.3211	3,600%
PM	0.004	0.0858	2,145%

17. The 2016 SGS FTP drive cycle test results show that NO_x emissions from the Sparks Deleted Truck reflected 3,600 percent of the truck's 2012 certified NO_x emission rate of 0.12 g/mi. The 2016 SGS FTP drive cycle test results show that PM emissions from the Sparks Deleted Truck reflected 2,145 percent of the truck's 2012 certified PM emission rate of 0.004 g/mi. These "excess emissions" (emissions above the manufacturer's, as-sold emission rate) amount to 0.0818 grams of PM and 4.2011 grams of NO_x per mile this vehicle is driven.

18. SGS also performed an on-board diagnostic (OBD) scan of the Sparks Deleted Truck. **Attachment 6.** The results of the OBD scan indicates that the truck's electronic emissions control system was significantly modified so that systems which were initially supported from the factory were no longer supported to prevent the check engine light (malfunction indicator light or "MIL") from being illuminated. For example, although this truck was certified with Selective Catalytic Reduction to reduce NO_x emissions, the NO_x after-treatment system monitor is reported as "unsupported" by the on-board diagnostic system.

19. In summary, I have verified that certified emission control components are not in place on the Sparks Deleted Truck. I have verified that the truck's on-board diagnostic system has been tampered with, as evidenced by the MIL being off although the MIL should be on because certified emissions control components are not in place. I have verified as a result of the missing control components and tampered OBDII system, the Sparks Deleted Truck emits excess pollution, as documented using the standard federal certification test procedure. The excess emissions of NO_x from this single truck are equivalent to the emissions from 36 certified and properly operating stock trucks of the same type. The excess emissions of PM from this single truck are equivalent to the emissions from 21 certified and properly operating stock trucks of the same type. PM is directly emitted by the truck and PM is also formed as a secondary pollutant through reactions of the truck's NO_x emissions in the ambient air – so both types of excess emissions are increasing levels of PM in the ambient air. NO_x alone is toxic and is also a precursor to the formation of another toxic air pollutant: ozone. Excess emissions contribute to elevated levels of PM, NO_x, and ozone in the ambient air, with potentially negative health consequences.

Dated 8/11/2017



Michael St. Denis, Principal, Revecorp

ATTACHMENT 1

Defendants' Responses to Request for Production of Documents, ¶ 8,
and First Amended Complaint, ¶¶ 138-152.

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Attorneys for Defendants

IN THE UNITED STATES DISTRICT COURT
DISTRICT OF UTAH, CENTRAL DIVISION

UTAH PHYSICIANS FOR A HEALTHY
ENVIRONMENT, INC.,

Plaintiff,

v.

DIESELSELLERZ.COM, LLC, DIESEL
POWER GEAR, LLC, 4X4 ANYTHING,
LLC, SPARKS MOTORS, LLC, DAVID W.
SPARKS, DAVID KILEY, JOSHUA STUART,
AND KEATON HOSKINS,

Defendants.

**Defendants’ DieselSellerz.com, Diesel
Power Gear, 4x4 Anything, and Sparks
Motors Responses to Plaintiff’s Requests
for Production of Documents**

Case No.: 2:17-CV-00032-BCW

Judge Robert J. Shelby

Pursuant to Rules 34 of the Federal Rules of Civil Procedure, Defendants, DIESELSELLERZ.COM, LLC, DIESEL POWER GEAR, LLC, 4X4 ANYTHING, LLC, and SPARKS MOTORS, LLC, (collectively “Responding Party”) submit the following objections and responses to Plaintiff’s Requests for Production of Documents.

PRELIMINARY STATEMENT

Each of the responses to the Requests for Production of Documents herein incorporates

Request No. 8: Please provide documentation that identifies each vehicle (including your own) on which you have removed or rendered inoperative any pollution control system or device within the applicable period, including but not limited to documentation that sets forth or pertains to each vehicle's image, make, model, model year, odometer mileage and VIN number, each pollution control device or system that was removed or rendered inoperative, and the date or dates on which such work was performed.

Response: With respect to Sparks Motors, LLC, please see below list of vehicles. All responsive documents relating to these vehicles will be produced and/or made available for inspection. Images identifying these vehicles will be produced with these responses. The remaining responding parties are unaware of any responsive documents. Responding Party is continuing to gather and review documents and will supplement if any additional responsive documents are found.

1. Built Diesel 1, the OG. Black, 4 door, 2012 Dodge Ram, winner, Ashton Barton, Sedalia, Missouri (August, 2013). Referenced in complaint.
 2. Built Diesel 2. White with black top, 4 door, 2013 Ford F250, winner in Salisbury, Md.
 3. Built Diesel 3 (1st place): green/black 2 door, flat bad, Dodge 12 valve cummins; winner Luke Kapalanizic, Kellog, Idaho.
 4. Built Diesel 3 (2nd place): grey army fatigue colored, 2 door, 2006 Chevy Duramax; winner James Wingerdon, Sunnyside, Washington.
 5. Built Diesel 5 (1st place): Red, 6 door, 2009 Ford F250, winner Brad Kurtzwell, Alaska.
- Please note that while this vehicle is being listed in response to this request, this vehicle was

owned by Keaton Hoskins at the time the emissions devices were rendered inoperable by Industrial Injections. It was thereafter used as a giveaway truck for Diesel Power Gear.

6. Built Diesel 6 (1st place): “Kodiak Monster” 2007 Black Chevy C4500; 7/8/2015 sweepstakes close; winner, Brandon Kalkbrenner, Paynesville, Minn took cash prize.

7. Built Diesel 6 (2nd place): Tan, single cab 2008 Dodge Ram 2500, winner Ian Nipper.

8. Red 6-door, F650 Supertruck; 8/30/2015 sweepstakes close; winner Kasey Bunch, Katy, Texas.

9. The Holy Grail; 1996 Dodge Ram 2500 SLT, 11/1/2015 sweepstakes close; winner Skylar Carter, Colby, Kansas.

10. Mtn Op Truck aka Ultimate Hunt Rig; 2009 Ford F250 XLT; 3/1/2015 sweepstakes close; winner: John Fregis, Ennis, Texas.

11. US Duramax; 2004 Chevy Silverado 2500 HD, May 31, 2015 sweepstakes close; winner, Zach Spicer, Denver Colorado.

12. 2013 Ford F250 (Ebay listing referenced in Complaint)

13. “Mega Ram” 2012 Dodge Ram 2500 (promo vehicle on property)

14. “Bro-Dozer” (promo vehicle on property)

15. “Hercules” (promo vehicle on property)

16. “Super Six” Ford F550 tan 6-door truck (promo vehicle on property).

17. The Reaper, black 2 door race truck (owned by one of the defendant companies’ employees)

Request No. 9: With respect to each vehicle identified in your response to Request No. 8 above,* please provide documentation that identifies the registration of each vehicle, the chain of

Attorney for Plaintiff

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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF UTAH
CENTRAL DISTRICT**

Utah Physicians for a Healthy Environment, Inc.,)
)
Plaintiff,)
v.)
)
Diesel Power Gear LLC, 4X4 Anything LLC,)
B&W Auto LLC d/b/a Sparks Motors LLC,)
David W. Sparks (“Heavy D”), David Kiley)
 (“Diesel Dave”), Joshua Stuart (“Redbeard”))
and Keaton Hoskins (“The Muscle”),)
)
Defendants.)
_____)

Case No. 2:17-cv-00032-RJS-DBP

FIRST AMENDED COMPLAINT

video was removed from public view on YouTube shortly after UPHE issued its pre-suit notice letter in this matter on July 27, 2016. <https://www.youtube.com/watch?v=R9poJWSwchU>.

136. The deleted Built Diesel 1 was operated by David Sparks and B&W Auto in Utah, and emitted elevated levels of pollutants into Utah's air.

137. In August of 2013, B&W Auto conveyed the deleted Built Diesel 1 as a prize to a DPG sweepstakes contestant. When David Sparks and B&W Auto conveyed deleted Built Diesel 1 the vehicle included parts and components that had the principal effect of defeating and bypassing emission control devices in the deleted Built Diesel 1, and David Sparks and B&W Auto knew those parts and components would be put to such use.

(ii) The Deleted 2013 Ford F250

138. In 2014, David Sparks and B&W Auto obtained a 2013 Ford F250 diesel truck, VIN 1FT7W2BT2DEA61696. The 2013 Ford F250 was a certified diesel vehicle with federally-required emission control devices including a DOC, a DPF and a SCR installed by the Ford Motor Company to ensure compliance with CAA emission standards consistent with the vehicle's COC.

139. In 2014, David Sparks and B&W Auto knowingly removed the 2013 Ford F250's DOC, DPF and SCR, and replaced those systems with a hollow exhaust pipe. They characterized the truck as having undergone a "full DPF delete" ("deleted 2013 Ford F250").

140. David Sparks and B&W Auto knowingly removed the MIL feature in the deleted 2013 Ford F250's ECM using an "H&S tune." David Sparks and B&W Auto also electronically removed the "limp mode" function of the deleted 2013 Ford F250's ECM that is designed to prevent the vehicle's full and continued operation after one or more emission control devices has been removed or become impaired. As with the deleted Build Diesel 1 above, when David

Sparks and B&W Auto applied an “H&S tune” to the deleted 2013 Ford F250, its manufacturer, H&S Performance, had already been prosecuted by EPA for selling precisely this type of illegal software. See paragraph 127 above.

141. The exhaust parts that David Sparks and B&W Auto installed on the deleted 2013 Ford F250 were not the same as the truck’s original, stock exhaust parts. The exhaust pipe they installed between the turbocharger and stack exit was a hollow straight pipe. David Sparks and B&W Auto did not replace the truck’s original, stock exhaust system that they removed with another exhaust system that was equally or more effective in reducing emissions.

142. David Sparks and B&W Auto have no evidence that their performance of a “full DPF delete” on the deleted 2013 Ford F250 would not adversely affect the truck’s emissions performance.

143. David Sparks and B&W Auto’s execution of a “full DPF delete with H&S tune” adversely affected the deleted 2013 Ford F250’s emissions performance.

144. Particulate matter emissions were greater after David Sparks and B&W Auto removed the stock DPF from the deleted 2013 Ford F250 compared to the truck’s particulate matter emissions before DPF removal.

145. NO_x emissions were greater after David Sparks and B&W Auto removed the stock SCR from the deleted 2013 Ford F250 compared to the truck’s NO_x emissions before SCR removal.

146. David Sparks and B&W Auto’s removal of the deleted 2013 Ford F250’s DOC, DPF and SCR eliminated the ability of these devices to reduce the emission of pollutants on a continuous basis.

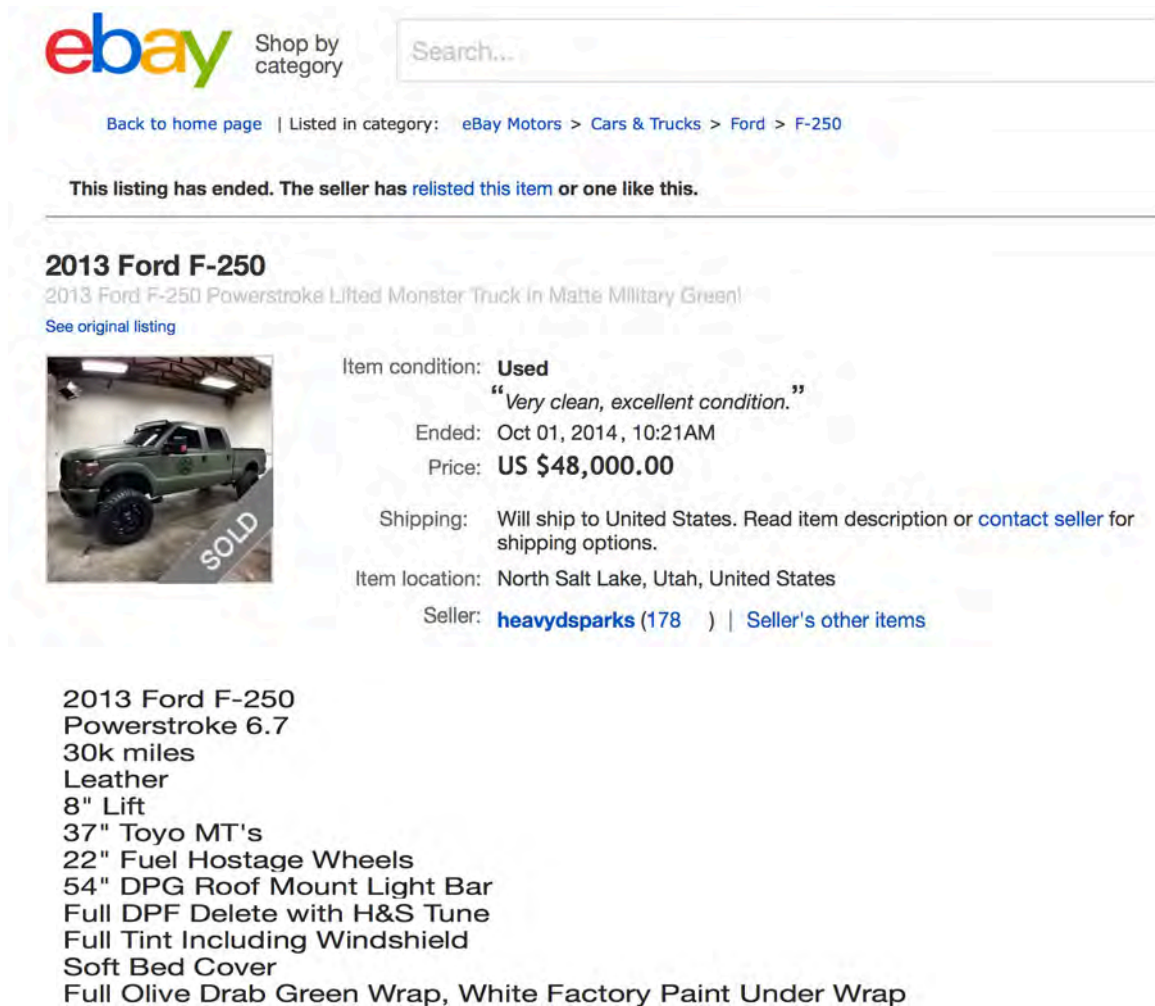
147. Emissions of PM and NO_x from the deleted 2013 Ford F250 with David Sparks and B&W Auto's "full DPF delete with H&S tune" exceed the truck's federal COC emission standards. Emissions from the deleted 2013 Ford F250 with "full DPF delete with H&S tune" exceed the truck's federal COC PM emission limit from between four to ten times, and the truck's federal COC NO_x limit from 20 to over 30 times.

148. A true and accurate copy of a video posted on Facebook by David Sparks ("Heavy D") on September 18, 2014, showing the deleted 2013 Ford F250 being driven in Woods Cross, Utah, is attached as **Exhibit B**. Posted under the title, "Having a bad day? Watch this and I guarantee you'll feel better," the video shows David Sparks displaying the ability of the deleted 2013 Ford F250 to "roll coal" into the Woods Cross neighborhood after David Sparks and B&W Auto's removal of the truck's emission control devices.

149. David Sparks and B&W Auto repeatedly operated the deleted 2013 Ford F250 on public roads and on public lands in Utah, and on private roads and on private lands in Utah.

150. In 2014, David Sparks and B&W Auto advertised the deleted 2013 Ford F250 for sale.

151. A true and accurate image of David Sparks and B&W Auto's ebay advertisement for the deleted 2013 Ford F250 is set forth below:



2013 Ford F-250
2013 Ford F-250 Powerstroke Lifted Monster Truck in Matte Military Green!
[See original listing](#)

Item condition: **Used**
"Very clean, excellent condition."
Ended: Oct 01, 2014, 10:21AM
Price: **US \$48,000.00**

Shipping: Will ship to United States. Read item description or [contact seller](#) for shipping options.
Item location: North Salt Lake, Utah, United States
Seller: [heavydsparks \(178\)](#) | [Seller's other items](#)

2013 Ford F-250
Powerstroke 6.7
30k miles
Leather
8" Lift
37" Toyo MT's
22" Fuel Hostage Wheels
54" DPG Roof Mount Light Bar
Full DPF Delete with H&S Tune
Full Tint Including Windshield
Soft Bed Cover
Full Olive Drab Green Wrap, White Factory Paint Under Wrap

152. David Sparks and B&W Auto offered to sell the deleted 2013 Ford F250 in 2014. When David Sparks and B&W Auto offered to sell the deleted 2013 Ford F250 the vehicle included aftermarket defeat parts that had the principal effect of defeating the vehicle's emission control devices, and David Sparks and B&W Auto knew those aftermarket defeat parts would be put to use as aftermarket defeat parts.

153. David Sparks and B&W Auto sold the deleted 2013 Ford F250 in 2014 to a Utah customer. When David Sparks and B&W Auto sold the deleted 2013 Ford F250 the vehicle included aftermarket defeat parts that had the principal effect of defeating the vehicle's emission

ATTACHMENT 2

Ford Motor Company COC Application
2013 diesel Ford F250 truck
August 21, 2012



**Vehicle Environmental Engineering
Environmental & Safety Engineering**

**Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W-200
Allen Park, Michigan 48101-2053**

August 21, 2012

Mr. Chris Nevers
Certification Division
Mobile Source Pollution Control
U. S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, Michigan 48105

Dear Mr. Nevers:

Ford Motor Company (Ford) herewith submits its Part I Application for Certification for 2013 model year diesel-powered heavy-duty vehicles (HDVs) contained in Ford's 50 state test group DFMXD06.761A. We have elected to optionally certify these vehicles on the chassis dynamometer, as allowed under 40 CFR 86.1863-07. The test fuel used is Federal ultra low sulfur diesel.

The EPA certification and in-use exhaust emission standards applicable to this test group are:

Certification FTP Standards (g/mi)	Useful Life	NMHC	CO	NOx	PM	HCHO
HDV (8,501-10,000 lb GVWR)	120K	0.195	7.3	0.2	0.02	0.032

Based on Ford Motor Company's good engineering judgment, all the vehicles described in this Application are designed to comply with the applicable full useful life standards, as described above.

This Part I application for certification has been prepared in accordance with the standardized format recommended by EPA via its mail out # VPCD-99-06 (LDV, LDT, SVM), subject: "CAP 2000 Implementation: Guidance Documents and Workshop", dated April 22, 1999. Therefore, in accordance with the provisions of 40 CFR 86.1844-01(d)(14), Ford requests that a Certificate of Conformity be issued for the HDV test group listed in this Application for Certification.

Please contact Travis Henney at 313-399-7256, if you have any questions regarding this submission.

Sincerely

A handwritten signature in blue ink, appearing to read "Todd M. Fagerman".

Todd M. Fagerman, Manager
Car and Truck Certification
Certification Programs



FORD MOTOR COMPANY
APPLICATION FOR CERTIFICATION – PART I

2013 MODEL YEAR

Durability Group: DFMXDPDNNF1B

Evaporative Family: N/A

Test Group: DFMXD06.761A

**Durability Group Description: Four Stroke, Diesel Cycle
Diesel Fueled, Direct Diesel Injection, Catalyst Code F**

**Test Group Description: 6.7L V8
Federal HDV1 / California MDV (8,501-10,000 lb GVWR)**

Applicable Standards: Federal HDV1 / California ULEV II

**Carlines Covered:
F250/F350 4x2/4x4 Complete and Box Delete**

Vehicle Tested:

DFA1-6.7-J-316 Config. 0: (FTP TN: DFMX91001457, HWY TN: DFMX91001460)

Release Date: December 3, 2012

**For Questions, Contact:
Travis Henney 313 399-7256
(thenney@ford.com)**



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Part 2 Application Index **(Running change updates)**

Manufacturer	Ford Motor Company	Manufacturer Code	FMX
Test Group	DFMXD06.761A	Evaporative/Refueling Family	N/A
Certificate Number	N/A	CARB Executive Order #	N/A
Certificate Issue Date	N/A	Certificate Revision Date	N/A
Certificate Effective Date	N/A	Conditional Certificate	--
CSI Revision #	N/A	CSI Submission/Revision Date	08/22/2012
Model Year	2013		

Test Group Information

CSI Type	Update for Correction	Running Change Reference Number	N/A
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Diesel	Common Rail Direct Diesel Injection	--

Hybrid Indicator	No		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	--
Fuel Cell Indicator	--	EPA Vehicle Class	HDV1
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	No
Durability Group Name	DFMXDPDNNF1B	Durability Group Equivalency Factor	1.0
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	--	CAP2000 Conditional Certificate?	N/A
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--
SFTP Compliance Indicator	No	SFTP Composite CO Option	No
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	DFMXD06.761A
Mfr Test Group Comments	F-Series Super Duty 8,501-10,000		
Mfr Exhaust / Evap Standards Comments	--		

Test Group		DFMXD06.761A		Evaporative/Refueling Family		N/A	
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Ford Motor Company	1 - Ford Division	325 - F250 4WD BED DELETE DIESEL	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	327 - F350 4WD BED DELETE DIESEL	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	324 - F250 2WD BED DELETE DIESEL	Federal	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	330 - F250 PICKUP 4WD DIESEL	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	392 - F350 4WD DIESEL	Federal	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	390 - F350 2WD DIESEL	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	325 - F250 4WD BED DELETE DIESEL	Federal	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	392 - F350 4WD DIESEL	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	326 - F350 2WD BED DELETE DIESEL	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	324 - F250 2WD BED DELETE DIESEL	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	326 - F350 2WD BED DELETE DIESEL	Federal	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	330 - F250 PICKUP 4WD DIESEL	Federal	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	390 - F350 2WD DIESEL	Federal	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	327 - F350 4WD BED DELETE DIESEL	Federal	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	315 - F250 PICKUP 2WD Diesel	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford Division	315 - F250 PICKUP 2WD Diesel	Federal	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Engine Description							
Hybrid Type		--		Hybrid Description		--	
Engine Type		4-Stroke Compression Ignition		Mfr Engine Description		4-Stroke Compression Ignition	
Engine Block Arrangement		V-shaped engine		Mfr Engine Block Arrangement Description		--	
Camless Valvetrain Indicator		No		Oil Viscosity/Classification		10W-30/CJ-4	
Number of Cylinders/Rotors		8					

Test Group		DFMXD06.761A		Evaporative/Refueling Family		N/A																	
After Treatment Device(s) (ATD)																							
ATD Number		ATD Type		ATD Precious Metal		Substrate Material		Substrate Construction															
1		Diesel Particulate Filter		Platinum + Palladium		Ceramic		Monolith															
2		Oxidation catalyst		Platinum + Palladium		Ceramic		Monolith															
3		Selective Catalytic Reduction		SCR contains no precious metal.		Ceramic		Monolith															
Mfr After Treatment Device (ATD) Comments		DOC, SCR, DPF																					
Direct Ozone Reduction (DOR) Device		Not Equipped																					
Mfr Emission Control Device Comments		--																					
Engine Configuration Number 1																							
Engine Displacement (liters)		6.7		Engine Rated Horsepower		400																	
Number of Inlet Valves Per Cylinder		2		Number of Exhaust Valves Per Cylinder		2																	
Air Aspiration Method		Turbocharged		Number of Air Aspiration Devices		1																	
Air Aspiration Device Configuration		Single		Charge Air Cooler Type		Liquid																	
Cylinder Deactivation Description		N/A																					
Variable Valve Timing System Description		N/A		Variable Valve Lift System		N/A																	
Number of Knock Sensors		0																					
Air/Fuel Sensor # 1 Type		Nitrogen oxide		Air/Fuel Sensor # 1 Description		N/A																	
Air/Fuel Sensor # 2 Type		Nitrogen oxide		Air/Fuel Sensor # 2 Description		N/A																	
Mfr Air/Fuel Sensor Comments		--																					
Exhaust Gas Recirculation		Yes		EGR Type		Electronic/Electric																	
Cooled Exhaust Gas Recirculation		Yes																					
Closed Loop Air Injection System		No		Air Injection Type		--																	
Mfr Engine Configuration Comments		--																					
Official Test Numbers																							
Test Group		Fuel		FTP		US06		SC03		Cold CO		Highway		EPA City Litmus Value		EPA City Litmus Threshold		EPA Highway Litmus Value		EPA Highway Litmus Threshold		CREE Weighting Factor	
Diesel		DFMX91001457		--		--		--		--		DFMX91001460		N/A		10.2		N/A		10.1		N/A	

Test Group	DFMXD06.761A	Evaporative/Refueling Family	N/A
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Emission Data Vehicle Information

Vehicle ID / Configuration DFA1-6.7-J-316 / 0

Vehicle Model

Represented Test Vehicle Make Ford **Represented Test Vehicle Model** F350 4x4

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Diesel

Hybrid Indicator N

Multiple Fuel Storage -- **Multiple Fuel Combustion** --

Fuel Cell Indicator -- **Rechargeable Energy Storage System Indicator** --

Rechargeable Energy Storage System -- **Rechargeable Energy Storage System, if 'Other'** --

Off-board charge Capable Indicator --

Transmission Type Automatic **# of Transmission Gears** 6

Engine Code DFA17A05 **Axle Ratio** 3.55

Displacement (liters) 6.7 **Rated Horsepower** 400

Equivalent Test Weight (pounds) 9500 **Air Aspiration Method** Turbocharged

Drive Mode While Testing Part-time 4-Wheel Drive **SIL Usage** Not equipped

Aged Emission Components 4,000 (mi)

Dynamometer Coefficients:

Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients	
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)		C (lbf/mph**2)
City/Highway/Evap	63.09	1.7856	0.1073	33.981	-0.00739	0.12115	56.1

Manufacturer Test Vehicle Comments F350 4x4 Crew Cab Box Delete, GVWR=10000 lb., Curb Weight=9225 lb., Transmission: 6R140 Semi-Automatic

Test Group	DFMXD06.761A	Evaporative/Refueling Family	N/A
Test #	DFMX10021649	Test Procedure	2 - CVS 75 and later (w/o can. load)
Exhaust Test # for this Evap Test	N/A	Test Fuel Type	19 - Cert Diesel 7-15 ppm Sulfur
Test Date	04/10/2012	Fuel	Diesel
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV2 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE MPG Equivalent Value	
Bag 1 Carbon Dioxide	888.41	--	
Bag 1 Fuel Economy	11.3833	11.3833	
Bag 2 Carbon Dioxide	733.931	--	
Bag 2 Fuel Economy	13.863	13.863	
Bag 3 Carbon Dioxide	760.672	--	
Bag 3 Fuel Economy	13.3759	13.3759	
CH4 - Methane	0.0276132	--	
Carbon Monoxide	0.599203	--	
Formaldehyde	0.00736	--	
Manufacturer Fuel Economy	13.1402	13.1402	
Nitrogen Oxide	0.121668	--	
Nitrous Oxide	0.01	--	
Non-methane Hydrocarbon	0.0599403	--	
Non-methane organic gas (California)	0.0623229	--	
Particulate Matter	0.0039827	--	
Total Hydrocarbon	0.0860562	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Optional Carbon-Related Exhaust Emissions	779	778	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	773.193	774	
Manufacturer Test Comments	--		

Test Group		DFMXD06.761A				Evaporative/Refueling Family				N/A		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	CO	0.60	--	--	-0.010000 UP	0.33	--	0.9	7.3	Pass
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HC-NM	0.0599	--	--	-0.000500 UP	0.0441	--	0.104	0.195	Pass
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HCHO	0.0074	--	--	0.000000 UP	0.0000	--	0.007	0.032	Pass
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	NOX	0.12	--	--	0.010000 UP	0.05	--	0.2	0.2	Pass
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	OPT-CREE	778	--	--	0.000000 UP	0.0	--	778	--	--
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	PM	0.004	--	--	0.000000 UP	0.005	--	0.01	0.02	Pass
CA	120,000 miles	California LEV-II ULEV	CO	0.60	--	--	-0.010000 UP	0.33	--	0.9	6.4	Pass
CA	120,000 miles	California LEV-II ULEV	HCHO	0.0074	--	--	0.000000 UP	0.0000	--	0.007	0.016	Pass
CA	120,000 miles	California LEV-II ULEV	NMOG	0.0623	--	1.00	-0.000500 UP	0.0441	--	0.106	0.143	Pass
CA	120,000 miles	California LEV-II ULEV	NOX	0.12	--	--	0.010000 UP	0.05	--	0.2	0.2	Pass
CA	120,000 miles	California LEV-II ULEV	PM	0.004	--	--	0.000000 UP	0.005	--	0.01	0.06	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Test Group	DFMXD06.761A	Evaporative/Refueling Family	N/A																																																
Test #	DFMX91001457	Test Procedure	2 - CVS 75 and later (w/o can. load)																																																
Exhaust Test # for this Evap Test	N/A	Test Fuel Type	19 - Cert Diesel 7-15 ppm Sulfur																																																
Test Date	08/01/2012	Fuel	Diesel																																																
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV2 MDV GVW 8501-10000)	DF Type	Mfr. Determined																																																
Verify Test Lab ID	--																																																		
Test Results																																																			
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Manufacturer Test Comments	TC This test has particulate results.TC N2O , CREE, and OPT-CREE set to default valuesTC (NMOG=NMHC)																																																		

Test Group		DFMXD06.761A				Evaporative/Refueling Family				N/A		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	CO	0.53	--	--	-0.010000 UP	0.33	--	0.8	7.3	Pass
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	CREE	783	--	--	0.000000 UP	0	--	783	--	--
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HC-NM	0.0656	--	--	-0.000500 UP	0.0441	--	0.109	0.195	Pass
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	NOX	0.16	--	--	0.010000 UP	0.05	--	0.2	0.2	Pass
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	OPT-CREE	787	--	--	0.000000 UP	0.0	--	787	--	--
Fed	120,000 miles	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	PM	0.001	--	--	0.000000 UP	0.005	--	0.01	0.02	Pass
CA	120,000 miles	California LEV-II ULEV	CO	0.53	--	--	-0.010000 UP	0.33	--	0.8	6.4	Pass
CA	120,000 miles	California LEV-II ULEV	NMOG	0.0656	--	1.00	-0.000500 UP	0.0441	--	0.109	0.143	Pass
CA	120,000 miles	California LEV-II ULEV	NOX	0.16	--	--	0.010000 UP	0.05	--	0.2	0.2	Pass
CA	120,000 miles	California LEV-II ULEV	PM	0.001	--	--	0.000000 UP	0.005	--	0.01	0.06	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Test Group	DFMXD06.761A	Evaporative/Refueling Family	N/A									
Test #	DFMX10021650	Test Procedure	3 - HWFE									
Exhaust Test # for this Evap Test	N/A	Test Fuel Type	19 - Cert Diesel 7-15 ppm Sulfur									
Test Date	04/10/2012	Fuel	Diesel									
Vehicle Class	MDV6 (Cal. LEV2 MDV GVW 8501-10000)	DF Type	Mfr. Determined									
Verify Test Lab ID	APTL											
Test Results												
Test Result Name	Unrounded Test Result	Verify Calculated FE MPG Equivalent Value										
CH4 - Methane	0.0019576	--										
Carbon Monoxide	0.0121962	--										
Manufacturer Fuel Economy	14.8958	14.8958										
Nitrogen Oxide	0.0831442	--										
Nitrous Oxide	0.01	--										
Non-methane Hydrocarbon	0	--										
Particulate Matter	0.0023392	--										
Total Hydrocarbon	0.0006569	--										
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE										
Optional Carbon-Related Exhaust Emissions	687	686										
Test Result Name	Unrounded Test Result	Verify Calculated CO2										
Carbon dioxide	683.111	683										
Manufacturer Test Comments --												
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	120,000 miles	California LEV-II ULEV	NOX	0.08	--	--	0.010000 UP	0.05	--	0.1	0.4	Pass

Test Group	DFMXD06.761A	Evaporative/Refueling Family	N/A																														
Test #	DFMX91001460	Test Procedure	3 - HWFE																														
Exhaust Test # for this Evap Test	N/A	Test Fuel Type	19 - Cert Diesel 7-15 ppm Sulfur																														
Test Date	08/01/2012	Fuel	Diesel																														
Vehicle Class	MDV6 (Cal. LEV2 MDV GVW 8501-10000)	DF Type	Mfr. Determined																														
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Manufacturer Test Comments	TC This test has particulate results.TC N2O , CREE, and OPT-CREE set to default valuesTC (NMOG=NMHC)																																
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail																					
CA	120,000 miles	California LEV-II ULEV	NOX	0.09	--	--	0.010000 UP	0.05	--	0.2	0.4	Pass																					

Test Group		DFMXD06.761A			Evaporative/Refueling Family		N/A		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		MDV6 (Cal. LEV2 MDV GVW 8501-10000)			Standard Level		California LEV-II ULEV		
Fuel		Diesel			Test Procedure		CVS 75 and later (w/o can. load)		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CO	--	--	--	-0.010000	0.120000	--	0.33	6.4
120,000 miles	HCHO	--	--	--	0.000000	0.000800	--	0.0000	0.016
120,000 miles	NMOG	--	--	1.00	-0.000500	0.013000	--	0.0441	0.143
120,000 miles	NOX	--	--	--	0.010000	-0.310000	--	0.05	0.2
120,000 miles	PM	--	--	--	0.000000	-0.005000	--	0.005	0.06
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		
Fuel		Diesel			Test Procedure		CVS 75 and later (w/o can. load)		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CO	--	--	--	-0.010000	0.120000	--	0.33	7.3
120,000 miles	CREE	--	--	--	0.000000	0.000000	--	0	999.99
120,000 miles	HC-NM	--	--	--	-0.000500	0.013000	--	0.0441	0.195
120,000 miles	HCHO	--	--	--	0.000000	0.000800	--	0.0000	0.032
120,000 miles	NOX	--	--	--	0.010000	-0.310000	--	0.05	0.2
120,000 miles	OPT-CREE	--	--	--	0.000000	0.000000	--	0.0	999.99
120,000 miles	PM	--	--	--	0.000000	-0.005000	--	0.005	0.02
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		MDV6 (Cal. LEV2 MDV GVW 8501-10000)			Standard Level		California LEV-II ULEV		
Fuel		Diesel			Test Procedure		HWFE		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	NOX	--	--	--	0.010000	-0.310000	--	0.05	0.4

Test Group		DFMXD06.761A	Evaporative/Refueling Family		N/A
Glossary					
Useful Life					
4	4,000 miles		120	120,000 miles	
50	50,000 miles		150	150,000 miles	
100	100,000 miles				
Emission Name					
HC-TOTAL	Total Hydrocarbon		FE BAG 2	Bag 2 Fuel Economy	
CO	Carbon Monoxide		FE BAG 3	Bag 3 Fuel Economy	
CO2	Carbon dioxide		FE BAG 4	Bag 4 Fuel Economy	
CREE	Carbon-Related Exhaust Emissions		MFR FE	Manufacturer Fuel Economy	
OPT-CREE	Optional Carbon-Related Exhaust Emissions		HC	Hydrocarbon for Running Loss and ORVR	
NOX	Nitrogen Oxide		METHANE	CH4 - Methane	
PM	Particulate Matter		METHANOL	CH3OH - Methanol	
PM-COMP	SFTP Composite Particulate Matter		N2O	Nitrous Oxide	
HC-NM	Non-methane Hydrocarbon		SPITBACK	Spitback Hydrocarbon in grams	
OMHCE	Organic material Hydrocarbon Equivalent		AMP-HRS	Integrated Amp-hours	
OMNMHCE	Organic material non-methane HC equivalent		START-SOC	System Start State of Charge Watt-hours	
NMOG	Non-methane organic gas (California)		END-SOC	System End State of Charge Watt-hours	
HCHO	Formaldehyde		ACT-DISTANCE	Actual Distance Driven (miles)	
H3C2HO	Acetaldehyde		AS-VOLT	Average System Voltage	
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03		CO2 BAG 1	Bag 1 Carbon Dioxide	
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides		CO2 BAG 2	Bag 2 Carbon Dioxide	
CO-COMP	SFTP Composite Carbon Monoxide		CO2 BAG 3	Bag 3 Carbon Dioxide	
ETHANOL	C2H5OH - Ethanol		CO2 BAG 4	Bag 4 Carbon Dioxide	
FE BAG 1	Bag 1 Fuel Economy				
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	
B2	Federal Tier 2 Bin 2		HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	
B3	Federal Tier 2 Bin 3		L2	California LEV-II LEV	
B4	Federal Tier 2 Bin 4		L2OP	California LEV-II LEV Optional	
B5	Federal Tier 2 Bin 5		U2	California LEV-II ULEV	
B6	Federal Tier 2 Bin 6		S2	California LEV-II SULEV	
B7	Federal Tier 2 Bin 7		ZEV	California ZEV	
B8	Federal Tier 2 Bin 8		OT	Other	
B9	Federal Tier 2 Bin 9		T1	Federal Tier 1	
B10	Federal Tier 2 Bin 10		PZEV	California PZEV	
B11	Federal Tier 2 Bin 11				

Test Group		DFMXD06.761A	Evaporative/Refueling Family		N/A
Transmission Type Code					
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)		M	Manual	
A	Automatic		OT	Other	
AM	Automated Manual		SA	Semi-Automatic	
CVT	Continuously Variable		SCV	Selectable Continuously Variable (e.g. CVT with paddles)	
Drive System Code					
4	4-Wheel Drive		P	Part-time 4-Wheel Drive	
F	2-Wheel Drive, Front		A	All Wheel Drive	
R	2-Wheel Drive, Rear				
Additional Terms and Acronyms					
AFC	Alternative Fuel Converter		ICI	Independent Commercial Importer	
CSI	Certificate Summary Information		ORVR	Onboard Refueling Vapor Recovery	
DF	Deterioration Factor		SIL	Shift Indicator Light	
Evap	Evaporation, Evaporative		Trans	Transmission	

ATTACHMENT 3

EPA Certificate of Conformity
2013 diesel Ford F250 truck
October 15, 2012,

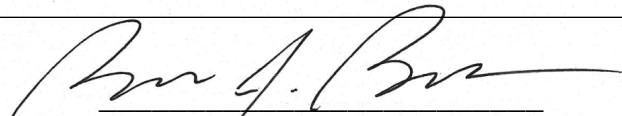


**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2013 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990**

**OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: Ford Motor Company
(U.S. Manufacturer or Importer)
Certificate Number: DFMXD06.761A-047

Effective Date:
10/15/2012
Expiration Date:
12/31/2013


Byron J. Bunker, Acting Division Director
Compliance Division

Issue Date:
10/15/2012
Revision Date:
N/A

Test Group Name: DFMXD06.761A
Evaporative/Refueling Family Name:
Applicable Exhaust Emission Standards: HDV1 (Federal HD chassis Class 2b GVW 8501-10000)
Applicable Evaporative/Refueling Standards:

Engine Displacement: 6.7 Liters
Exhaust Emission Test Fuel Type: Cert Diesel 7-15 ppm Sulfur
Full Useful Life Miles: Exhaust Emissions: 120,000 miles
Full Useful Life Miles: Evaporative/Refueling Emissions: N/A

Models Covered: Ford: F250 2WD BED DELETE DIESEL, F250 4WD BED DELETE DIESEL, F250 PICKUP 2WD Diesel, F250 PICKUP 4WD DIESEL, F350 2WD BED DELETE DIESEL, F350 2WD DIESEL, F350 4WD BED DELETE DIESEL, F350 4WD DIESEL

Pursuant to section 206 of the Clean Air Act (42 U.S.C.7525) and 40 CFR Parts 85, 86, 88, 1037, and 600 as applicable, this certificate of conformity is hereby issued with respect to test vehicles which have been found to conform to the requirements of the regulations on Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines (40 CFR Parts 85, 86, 88, 1037, and 600 as applicable) and which represent the new motor vehicle models listed above by test group and evaporative/refueling emission family, more fully described in the application of the above named manufacturer. Vehicles covered by this certificate have demonstrated compliance with the applicable emission standards as more fully described in the manufacturer's application. This certificate covers the above models, which are designed to meet the applicable emission standards specified in 40 CFR Parts 85, 86, 88, 1037, and 600 as applicable at both high and low altitude as applicable.

EPA is issuing this certificate subject to the conditions and provisions of 40 CFR 86.1848(c), and 40 CFR 1037 as applicable.

This certificate covers only those new motor vehicles or vehicle engines which conform, in all material respects, to the design specifications that apply to those vehicles or engines described in the documentation required by 40 CFR Parts 85, 86, 88, 1037, and 600 as applicable and which are produced during the 2013 model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 85, 86, 88, 1037, and 600 as applicable. The manufacturer shall obtain the approval of the California Air Resources Board (in the form of an executive order issued by the California Air Resources Board) prior to introducing any vehicle covered by this certificate into commerce 1) in the State of California, or 2) in a State that, under the authority of Section 177 of the Clean Air Act, has adopted and placed into effect the California standards to which this test group has been certified.

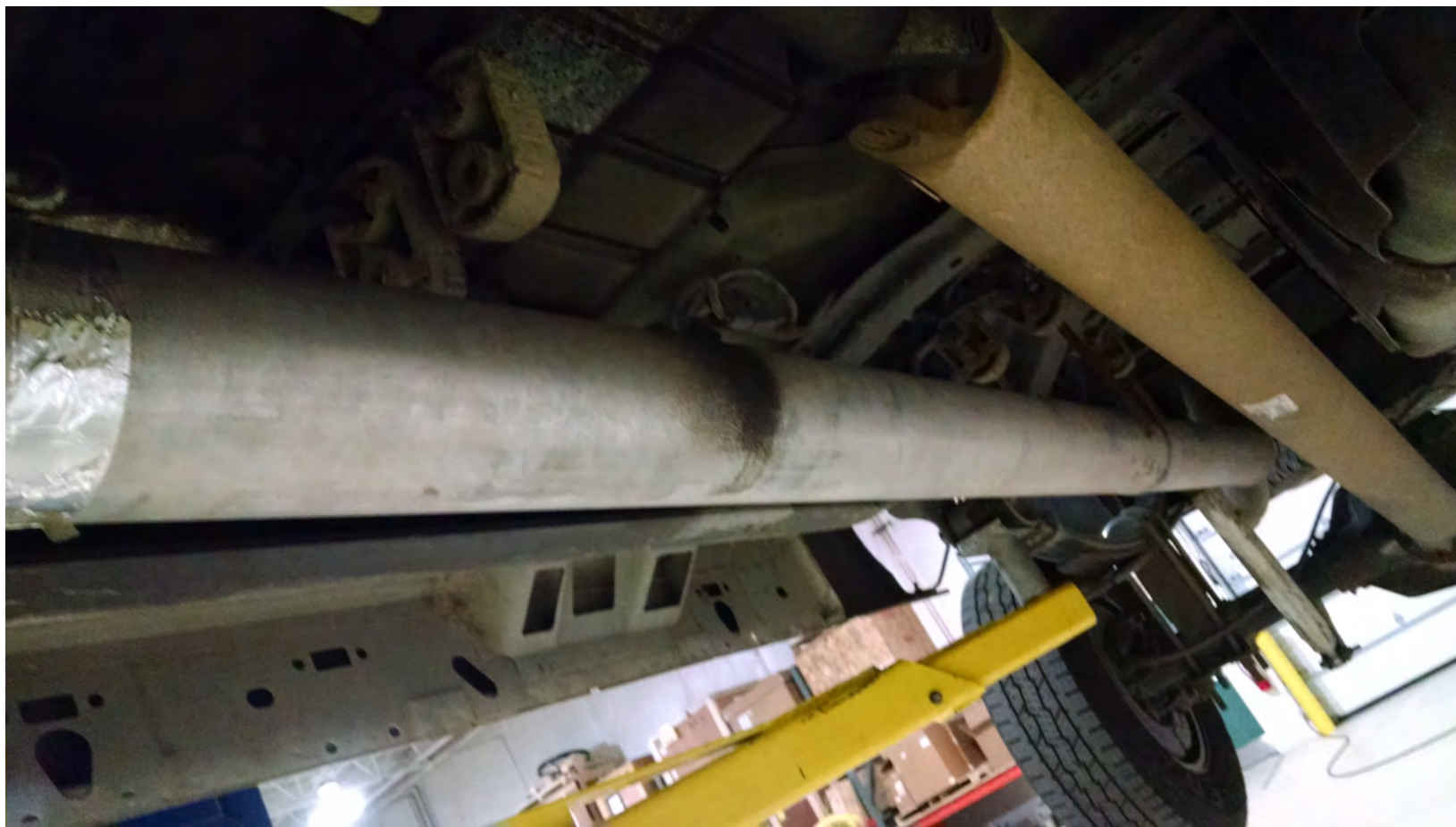
Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel are equipped with an emission control device which the Administrator has determined will be significantly impaired by the use of leaded fuel. This certificate is issued subject to the conditions specified in 40 CFR 80.24. Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel, otherwise covered by this certificate, which are driven outside the United States, Canada, Mexico, Japan, Australia, Taiwan and the Bahama Islands will be presumed to have been operated on leaded fuel resulting in deactivation of the catalysts. If these vehicles are imported or offered for importation without retrofit of the catalyst, they will be considered not to be within the coverage of this certificate unless included in a catalyst control program operated by manufacturer or a United States Government Agency and approved by the Administrator.

In the case of completely assembled vehicles, this certificate of conformity covers only vehicles which are completely manufactured prior to January 1, 2014. Normally incompletely assembled vehicles (such as cab chassis) may be completed after this date, provided that the basic manufacturing (including installation of the emission control system) was completed prior to January 1, 2014. This certificate does not cover vehicles sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

ATTACHMENT 4

SGS Pre-test Underbody Pictures
2013 Ford F250
May 2, 2016







ATTACHMENT 5

SGS FTP NO_x and PM Test Results
2013 Ford F250
May 2, 2016

REV - REV-61696

VTR# 000935745

Vehicle Info.		Test Parameters		Pre-Test Conditions		
Control Number	REV-61696	Test Type	Diesel Bag Only	Barometer	630.81	(mm.Hg)
Test Number	03132492	Inertia Weight	9000.00 lbs.	T_Dry	70.21	(F°)
Vehicle		Actual Power	0.00	DT_Cell	45.14	(F°)
Vehicle Number	1FT7W2BT2DEA61696	Indicated Power	1.00	Abs_Hum_DAir	53.55	(gH2O/lb)
Make	Ford	Fuel	CERT DIESEL 160224	P_SimBaro	629.68	(mm.Hg)
Model	F-250	Stoich % CO2	13.5748	Ambient Concentration		
Year	2013	Specific Gravity	0.8452	HC (ppm)	3.1258	
License	5-19482	Fuel Density	16.2703	CO(l) (ppm)	1.4107	
State	WY	Lower Heat Value	18440.0000	NOx (ppm)	0.0972	
Engine		Gms C/Gallon Fuel	2775.4546	CO2 (%)	0.0551	
Displacement (l)	6.70	Carbon Wt Fraction	0.8690	HHC (ppm)	4.0568	
Cylinders	8	Hydrogen Wt Fraction	0.1310	HHC Pre Test Data		
Valves	0	Fuel Capacity	26.0000 U.S. Gals.	Zero	-0.0640	
Bore	0.00	40% Fuel Capacity	10.4000 U.S. Gals.	Zero Offset (pfs)	0.0000	
Stroke	0.00	Driving Trace	1975FTP.trc	Span	270.1142	
Comp. Ratio	0.00	Shift Schedule	AUTOFTP.shf	Span Factor	1.0000	
Tires		Event File:		Roadload Coefficients		
Tire Size	245/75R17	Rcv'd Odometer	0.00	A	B	C
Tire Manufacturer	Grabber	Modal Data File	c:\modaldata\03132492.mdf	Target	47.23000	1.74920
Tire Type	General	Air Conditioning	Yes	Dyno Set	32.02160	0.42739
Tire Pressure	75.00	Side Fan (HWFET Only)	No	Vehicle Loss	15.20840	1.32181
Transmission		Side Fan All Tests	No	CFV Selections		
Transmission Type	Automatic	Start Odometer	51149.00	CVS Selection:	Gasoline	
Evap Package		Temperature Setpoint	74.0 (F°)	CFV #1	90 scfm	
Evaporative System		Post Test Coast Downs	No	CFV #2	521 scfm	
Canister Number		Pause Test Between Trace Files	No			
Canister Volume	0.00	Use NMOG Cart	No			
Canister Purge Rate	0.00	Use INNOVA Analyzer	No			
		TESTNET VA File:				
Engineer		Certification Test:	No			
Name		Methane Correction Factor	1.08			
Phone						
FAX						
		Tunnel/Particulate Paramters				
		Use Diesel Tunnel	Yes			
		Use Regular HC as Bag Analyzer	No			
		Particulate Analysis	Yes			
		Adjust Part Flow to CVS	Yes			
		Particulate Flow Setpt	80.00 (scf/h)			
		Particulate Sample Type	Multiple Filters			
		Use Secondary Dilution	Yes			
		Dilution Flow Setpoint	50.00 (scf/h)			
		Testing Personnel				
		Driver	NFLEENOR			
		Technician	NFLEENOR			
Comment						
Original tires 37x13.5R22. Tested with SGS F-250 tires.						

Bag Analysis							
Phase 1							
Bag Pair #1							
		HC - AMBIENT ONLY	CO(l)	NOx	CO2	CH4	HHC
Units		(ppm)	(ppm)	(ppm)	(%)	(ppm)	(ppm)
Analyzer Range		2	2	2	1	1	1
Analyzer Max Conc.		100.00	200.00	100.00	2.0000	30.00	300.00
Span Gas		91.10	181.80	90.20	1.8200	27.20	268.60
Calibration Date		04/05/2016 12:32:05	04/05/2016 08:47:21	04/05/2016 10:02:37	04/05/2016 07:53:33	04/05/2016 13:25:50	04/21/2016 12:44:11
VZS Active		Yes	Yes	Yes	Yes	Yes	Yes
Sniff Concentration	10:21:26	27.15	138.99	47.63	1.0240	2.09	----
Zero	10:21:51	-0.04	0.75	0.07	0.0012	0.10	7.79
Zero Offset (pfs)		0.05	-0.40	-0.05	-0.09	-0.30	0.00
Span	10:22:36	92.44	179.00	92.06	1.8342	27.43	8.81
Span Factor		0.99	1.02	0.98	1.00	1.00	1.00
Zero	10:23:48	0.01	0.01	0.09	0.0008	0.06	9.02
Ambient Concentration	10:24:40	3.06	3.92	0.22	0.0609	1.99	3.06
Sample Concentration	10:25:27	27.32	141.40	47.68	1.0247	3.64	69.90
Concentration		---	137.78	47.47	0.9685	1.81	67.07
Bag Grams		---	22.771	12.230	2515.220	0.171	5.490
Bypass Mass		---	0.000	0.000	0.000	0.000	0.000
Gms/Mile		---	6.3358	3.4028	699.8401	0.0476	1.5276
CVS Volume (scf)	5012.69	Test Conditions					
Bypass Volume (scf)	0.00						
Dilution Factor	13.03	T_Dry	(F°)	Minimum	Maximum	Average	
Mass Correction	1.0000	P_CellBaro	(mm.Hg)	70.37	72.83	71.37	
NOx_Corr	0.9490	T_Tunn_1	(C°)	630.56	630.56	630.59	
Distance	3.59	T_HHC_Probe	(C°)	23.90	41.30	33.18	
Fuel Economy (mpg)	14.23			190.73	191.11	190.91	
Fuel Consumed (g)	806.91	Q_Part	(scf/h)	76.93	80.80	78.30	
Particulate Vol (scf)	11.01	T_PM_Tree	(C°)	39.38	41.47	40.12	
		Q_2Dil	(scf/h)	48.43	50.36	49.31	

Bag Analysis							
Phase 2							
Bag Pair #2							
		HC - AMBIENT ONLY	CO(l)	NOx	CO2	CH4	HHC
Units		(ppm)	(ppm)	(ppm)	(%)	(ppm)	(ppm)
Analyzer Range		1	2	2	1	1	1
Analyzer Max Conc.		30.00	200.00	100.00	2.0000	30.00	300.00
Span Gas		27.70	181.80	90.20	1.8200	27.20	268.60
Calibration Date		04/05/2016 12:17:43	04/05/2016 08:47:21	04/05/2016 10:02:37	04/05/2016 07:53:33	04/05/2016 13:25:50	04/21/2016 12:44:11
VZS Active		Yes	Yes	Yes	Yes	Yes	Yes
Sniff Concentration	10:26:14	14.30	71.55	41.71	0.6401	3.76	----
Zero	10:26:39	0.12	0.75	0.09	0.0011	0.13	7.07
Zero Offset (pfs)		-0.39	-0.38	-0.08	-0.09	-0.37	0.00
Span	10:27:31	27.18	180.08	92.01	1.8324	27.27	6.47
Span Factor		1.02	1.01	0.98	1.00	1.00	1.00
Zero	10:28:17	-0.04	0.01	0.06	0.0009	0.07	6.02
Ambient Concentration	10:29:04	3.17	1.61	0.14	0.0549	1.98	3.17
Sample Concentration	10:29:50	14.73	71.99	40.94	0.6354	2.16	44.05
Concentration		---	70.46	40.80	0.5832	0.27	41.03
Bag Grams		---	19.672	17.711	2558.532	0.044	5.674
Bypass Mass		---	0.000	0.000	0.000	0.000	0.000
Gms/Mile		---	5.0981	4.5901	663.0775	0.0113	1.4704
CVS Volume (scf)	8468.09	Test Conditions					
Bypass Volume (scf)	0.00						
Dilution Factor	21.08	T_Dry	(F°)	Minimum	Maximum	Average	
Mass Correction	1.0000	P_CellBaro	(mm.Hg)	71.83	73.40	72.63	
NOx_Corr	0.9464	T_Tunn_1	(C°)	630.32	630.56	630.32	
Distance	3.86	T_HHC_Probe	(C°)	40.60	44.60	42.57	
Fuel Economy (mpg)	15.04			190.77	191.17	190.96	
Fuel Consumed (g)	819.17	Q_Part	(scf/h)	76.49	80.23	77.52	
Particulate Vol (scf)	18.67	T_PM_Tree	(C°)	39.97	48.02	45.41	
		Q_2Dil	(scf/h)	48.18	49.00	48.58	

Bag Analysis		HC - AMBIENT ONLY					
Phase 3							
Bag Pair #3							
Units		(ppm)	(ppm)	(ppm)	(%)	(ppm)	(ppm)
Analyzer Range		1	2	2	1	1	1
Analyzer Max Conc.		30.00	200.00	100.00	2.0000	30.00	300.00
Span Gas		27.70	181.80	90.20	1.8200	27.20	268.60
Calibration Date		04/05/2016 12:17:43	04/05/2016 08:47:21	04/05/2016 10:02:37	04/05/2016 07:53:33	04/05/2016 13:25:50	04/21/2016 12:44:11
VZS Active		Yes	Yes	Yes	Yes	Yes	Yes
Sniff Concentration	10:39:57	10.52	56.01	65.44	0.8441	2.30	----
Zero	10:40:22	0.04	0.74	0.09	0.0015	0.11	3.93
Zero Offset (pfs)		-0.12	-0.39	-0.08	-0.12	-0.30	0.00
Span	10:41:07	27.30	180.10	92.01	1.8208	27.43	273.70
Span Factor		1.02	1.01	0.98	1.00	1.00	1.00
Zero	10:42:00	-0.03	-0.02	0.04	0.0005	0.05	-2.25
Ambient Concentration	10:42:56	3.15	1.20	0.15	0.0530	2.01	3.15
Sample Concentration	10:43:42	10.84	55.83	64.07	0.8393	2.07	30.25
Concentration		---	54.71	63.93	0.7896	0.19	27.30
Bag Grams		---	8.944	16.252	2028.667	0.018	2.211
Bypass Mass		---	0.000	0.000	0.000	0.000	0.000
Gms/Mile		---	2.4806	4.5074	562.6214	0.0050	0.6131
CVS Volume (scf)	4958.85	Test Conditions					
Bypass Volume (scf)	0.00						
Dilution Factor	16.05	T_Dry	(F°)	Minimum	Maximum	Average	
Mass Correction	1.0000	P_CellBaro	(mm.Hg)	70.75	73.99	72.54	
NOx_Corr	0.9466	T_Tunn_1	(C°)	630.08	630.32	630.29	
Distance	3.61	T_HHC_Probe	(C°)	36.80	45.10	40.80	
Fuel Economy (mpg)	17.88			190.84	191.15	190.97	
Fuel Consumed (g)	643.95	Q_Part	(scf/h)	76.75	80.53	78.74	
Particulate Vol (scf)	11.07	T_PM_Tree	(C°)	39.36	41.00	39.95	
		Q_2Dil	(scf/h)	49.25	50.41	49.83	

Bag Analysis											
Phase 1											
CVS Volume (scf)	5012.69	Analyzer	HC - AMB. ONLY	CO(l)	NOx	CO2	CH4	HHC	NMHC	Start Time	09:58:07
Bypass Volume (scf)	0.00	Max Conc.	100.00 (ppm)	200.00 (ppm)	100.00 (ppm)	2.0000 (%)	30.00 (ppm)	300.00 (ppm)		End Time	10:06:33
Dilution Factor	13.03	Sample	27.32	141.40	47.68	1.0247	3.64	69.90		Read Time	10:25:27
Mass Correction	1.0000	Ambient	3.06	3.92	0.22	0.0609	1.99	3.06		Test Conditions	
NOx_Corr	0.9490	Net Conc.	---	137.78	47.47	0.9685	1.81	67.07	65.12		
Distance	3.59									Min	Max
Fuel Economy (mpg)	14.23	Grams	---	22.7709	12.2297	2515.2205	0.1710	5.4902	5.3309	T_Dry (F°)	70.37
Fuel Consumed (g)	806.91	Grams/mi	---	6.3358	3.4028	699.8401	0.0476	1.5276	1.4833	P_CellBaro (l	630.56
Particulate Vol (scf)	11.01										630.56
											Avg
											71.37
											630.59
Phase 2											
CVS Volume (scf)	8468.09	Analyzer	HC - AMB. ONLY	CO(l)	NOx	CO2	CH4	HHC	NMHC	Start Time	10:06:33
Bypass Volume (scf)	0.00	Max Conc.	30.00 (ppm)	200.00 (ppm)	100.00 (ppm)	2.0000 (%)	30.00 (ppm)	300.00 (ppm)		End Time	10:21:00
Dilution Factor	21.08	Sample	14.73	71.99	40.94	0.6354	2.16	44.05		Read Time	10:29:50
Mass Correction	1.0000	Ambient	3.17	1.61	0.14	0.0549	1.98	3.17		Test Conditions	
NOx_Corr	0.9464	Net Conc.	---	70.46	40.80	0.5832	0.27	41.03	40.73		
Distance	3.86									Min	Max
Fuel Economy (mpg)	15.04	Grams	---	19.6715	17.7112	2558.5317	0.0438	5.6737	5.6329	T_Dry (F°)	71.83
Fuel Consumed (g)	819.17	Grams/mi	---	5.0981	4.5901	663.0775	0.0113	1.4704	1.4598	P_CellBaro (l	630.32
Particulate Vol (scf)	18.67										630.56
											Avg
											72.63
											630.32
Phase 3											
CVS Volume (scf)	4958.85	Analyzer	HC - AMB. ONLY	CO(l)	NOx	CO2	CH4	HHC	NMHC	Start Time	10:31:06
Bypass Volume (scf)	0.00	Max Conc.	30.00 (ppm)	200.00 (ppm)	100.00 (ppm)	2.0000 (%)	30.00 (ppm)	300.00 (ppm)		End Time	10:39:32
Dilution Factor	16.05	Sample	10.84	55.83	64.07	0.8393	2.07	30.25		Read Time	10:43:42
Mass Correction	1.0000	Ambient	3.15	1.20	0.15	0.0530	2.01	3.15		Test Conditions	
NOx_Corr	0.9466	Net Conc.	---	54.71	63.93	0.7896	0.19	27.30	27.09		
Distance	3.61									Min	Max
Fuel Economy (mpg)	17.88	Grams	---	8.9444	16.2524	2028.6672	0.0179	2.2106	2.1939	T_Dry (F°)	70.75
Fuel Consumed (g)	643.95	Grams/mi	---	2.4806	4.5074	562.6214	0.0050	0.6131	0.6084	P_CellBaro (l	630.08
Particulate Vol (scf)	11.07										630.32
											Avg
											72.54
											630.29
Weighted Results											
		Analyzer	HC	CO(l)	NOx	CO2	CH4	HHC	NMHC		
		Total grams	4.2630	51.3868	46.1933	7102.4194	0.2327	13.3745	13.1577		
		Total g/mi	0.3855	4.6469	4.1772	642.2701	0.0210	1.2094	1.1898		
		Phase 1 wtd g/mi	0.1157	1.3138	0.7056	145.1238	0.0099	0.3168	0.3076		
		Phase 2 wtd g/mi	0.2170	2.6372	2.3744	343.0009	0.0059	0.7606	0.7552		
		Phase 3 wtd g/mi	0.0488	0.6830	1.2411	154.9158	0.0014	0.1688	0.1675		
Fuel Econ (mpg)	15.54	FTP Weighted	0.3815	4.6341	4.3211	643.0406	0.0171	1.2462	1.2303		

VTR# 000935745

SGS Environmental Testing Center. 2022 Helena St. Aurora, CO 80011
Data herein contained in this document is confidential and proprietary, and is only for the intended recipients. Unauthorized use is strictly prohibited. (Form #SLFM551801 Issued 11/12/01)

CFR Part 1066 Driver Statistics

Vehicle Info.		Test Type	Diesel Bag Only
Control Number	REV-61696	Inertia Weight	9000.00 lbs.
Test Number	03132492	Actual Power	0.00
Modal Data File	c:\modaldata\03132492.mdf	Indicated Power	1.00
Vehicle		Fuel	CERT DIESEL 160224
Vehicle Number	1FT7W2BT2DEA61696	Fuel Capacity	26.00
Make	Ford	40% Fuel Capacity	10.40
Model	F-250	Driving Trace	1975FTP.trc,
Year	2013	Shift Schedule	AUTOFTP.shf,
License	5-19482		
State	WY		

Cycle ID	Cycle	RLHP 50 mph	Max Abs Spd Delta	RMS Spd Err	Distance(m)		Cycle Energy(MJ)		D/CE(m/ MJ)		ASC(m/s)		Pos In Work(MJ)		DR %	ER %	EER %	ASCR %	IWR %	IWF		RLWF	
					Target	Driven	Target	Driven	Target	Driven	Target	Driven	Target	Driven						Target	Driven	Target	Driven
1	FTP P1	0	1.89	0.464	5779.11	5782.70	7.13	7.07	0.0	0.0	205.2	203.6	4.085	4.013	0.062	-0.822	-0.892	-0.804	-1.745	0.573	0.568	0.427	0.427
2	FTP P2	0	2.72	0.517	6211.24	6208.64	6.45	6.41	0.0	0.0	341.2	338.6	4.556	4.482	-0.042	-0.684	-0.647	-0.766	-1.620	0.706	0.699	0.294	0.294
3	FTP P3	0	2.47	0.525	5779.18	5803.01	7.13	7.11	0.0	0.0	205.2	206.1	4.085	4.078	0.412	-0.252	-0.666	0.410	-0.153	0.573	0.574	0.427	0.427
Weighted				0.502													-0.695	-0.521	-1.250				

REV - REV-61696

VTR# 000935745

All Tests					
	Low	High	Ph 1	Ph 2	Ph 3
Barometer (in Hg)	23.00	25.00	24.83	24.83	24.82
Driver Violations (secs)	0.00	0.00	0.00	0.00	0.00
Coast Down	0.00	0.00	0.00	0.00	0.00
Req. CVS cu ft vs. Actual (%)	-5.00	5.00	1.29	2.76	2.35
Hold Time (secs)	0.00	0.00	0.00	0.00	0.00
Crank Time (secs)	0.00	5.00	1.10	0.00	1.20
Hot Soak Time (secs)	0.00	660.00	0.00	602.40	0.00
Phase Length (secs)	-2.00	2.00	0.00	-1.00	0.00
Phase Distance (mi)	-0.10	0.10	-0.00	0.00	-0.01
CFV P (mm hg)	560.00	760.00	602.96	602.72	602.80
Amb/Cold/Run Loss Conditions					
	Low	High	Ph 1	Ph 2	Ph 3
Dry Temperature (F) - Ambient Tests.	68.00	86.00	70.37	71.83	70.75
Abs Humidity (grns/lb air)- Amb Tests	40.00	75.00	54.32	53.22	53.30
Amb. Nox Corr Factor	0.86	1.00	0.95	0.95	0.95
Amb. CVS Temperature (F)	68.00	140.00	75.08	105.17	96.21
Bag Tests					
	Low	High	Ph 1	Ph 2	Ph 3
HC Ambient Read	0.00	5.00	3.06	3.17	3.15
CO Ambient Read	0.00	15.00	3.92	1.61	1.20
CO2 Ambient Read	0.04	0.09	0.06	0.05	0.05
NOx Ambient Read	0.00	2.00	0.22	0.14	0.15
CH4 Ambient Read	0.00	10.00	1.99	1.98	2.01
HC Bag Conc	0.00	3000.00	27.32	14.73	10.84
CO Bag Conc	0.00	1000.00	141.40	71.99	55.83
CO2 Bag Conc	0.00	20.00	1.02	0.64	0.84
NOx Bag Conc	0.00	1000.00	47.68	40.94	64.07
CH4 Bag Conc	0.00	1000.00	3.64	2.16	2.07
Bag Fuel Econ.	0.00	50.00	14.23	15.04	17.88
Bag Read Time	0.00	1200.00	1134.00	530.00	250.00
Length of Read Process	120.00	500.00	241.00	216.00	225.00

Diesel Tests					
	Low	High	Ph 1	Ph 2	Ph 3
Diesel Tunn Temp (F)	68.00	200.00	75.02	105.08	98.24
HHC Line Temp (F)	365.00	380.00	374.71	374.87	374.93
HHC Probe Temp (F)	365.00	380.00	375.32	375.39	375.52
Particulate Testing					
	Low	High	Ph 1	Ph 2	Ph 3
PM Probe Flow diff (%)	-2.00	2.00	-3.82 *L*	3.21 *H*	-4.69 *L*
PM Dil Probe Flow diff (%)	-2.00	2.00	-1.24	-0.67	0.00
PM Probe Temp (F)	365.00	385.00	106.64 *L*	118.44 *L*	105.80 *L*
HHC Analyzer					
Pre Test Zero	-0.06				
Pre Test Span	270.11				
Pre Test Zero Check	0.23				
Pre Test Ambient	3.13				
Post Test Zero	3.93				
Post Test Span	273.70				

Particulate Weight Result

Test Number: 3132492
Test Date: 5/2/2016
Vehicle: REV-61696
Fuel: CERT DIESEL 160224
Technician: none
Tare Date: 01/01/2000 00:00:00
Weigh Date: 01/01/2000 00:00:00
Tray Set: 18
Batch No. 3829

Filter	Tare Wt (mg)	Final Wt (mg)	Final Gain (mg)	Dist (mi)	Part Vol (scf)	CVS Vol (scf)	Dil Vol(scf)	Primary Sample Vol(scf)	Dil Ratio	CVS Equivalent Volume (scf)	Particulate (g)	Particulate (g/mi)
1	80.9139	81.4094	0.4955	3.59	11.01	5008.61	6.93	4.08	2.70	13536.90	0.6099	0.1697
2	98.2297	98.4059	0.1762	3.86	18.67	8461.10	11.70	6.97	2.68	22684.58	0.2143	0.0555
3	83.8153	84.0501	0.2348	3.61	11.07	4954.78	7.01	4.06	2.72	13506.41	0.2866	0.0795

Weighted Grams/Mile (phases 1-3)
0.0858

ATTACHMENT 6

SGS OBDII Scan Results
2013 Ford F250

PM Filter	Supported	Incomplete
EGR/VVT System	Unsupported	

Results of On-board Oxygen Sensor Monitoring Tests

O2 Test Parameter	B1-S1	B1-S2	B1-S3	B1-S4	Unit
Lean to rich sensor switch time	N/A	N/A	N/A	N/A	Sec.
Minimum sensor voltage for test cycle	N/A	N/A	N/A	N/A	Volt
Lean to rich sensor threshold voltage	N/A	N/A	N/A	N/A	Volt
High sensor voltage for switch time calculation	N/A	N/A	N/A	N/A	Volt
Rich to lean sensor threshold voltage	N/A	N/A	N/A	N/A	Volt
Low sensor voltage for switch time calculation	N/A	N/A	N/A	N/A	Volt
Time between sensor transitions	N/A	N/A	N/A	N/A	Sec.
Rich to lean sensor switch time	N/A	N/A	N/A	N/A	Sec.
Maximum sensor voltage for test cycle	N/A	N/A	N/A	N/A	Volt

FORD CAN MODE \$06 TEST RESULTS

MID	Monitor Name	TID	Test	Results	Value	Min	Max	Units
\$01	Exhaust Gas Sensor Monitor Bank 1 - Sensor 1	\$9A	UNDOCUMENTED OBDMID: \$01 TID: \$9A	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$90	UNDOCUMENTED OBDMID: \$02 TID: \$90	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$91	UNDOCUMENTED OBDMID: \$02 TID: \$91	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$92	UNDOCUMENTED OBDMID: \$02 TID: \$92	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$94	UNDOCUMENTED OBDMID: \$02 TID: \$94	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$95	UNDOCUMENTED OBDMID: \$02 TID: \$95	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$96	UNDOCUMENTED OBDMID: \$02 TID: \$96	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$97	UNDOCUMENTED OBDMID: \$02 TID: \$97	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$98	UNDOCUMENTED OBDMID: \$02 TID: \$98	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$02	Exhaust Gas Sensor Monitor Bank 1 - Sensor 2	\$99	UNDOCUMENTED OBDMID: \$02 TID: \$99	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$21	Catalyst Monitor Bank 1	\$90	UNDOCUMENTED OBDMID: \$21 TID: \$90	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$31	EGR Monitor Bank 1	\$90	UNDOCUMENTED OBDMID: \$31 TID: \$90	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$31	EGR Monitor Bank 1	\$91	UNDOCUMENTED OBDMID: \$31 TID: \$91	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$31	EGR Monitor Bank 1	\$92	UNDOCUMENTED OBDMID: \$31 TID: \$92	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$31	EGR Monitor Bank 1	\$93	UNDOCUMENTED OBDMID: \$31 TID: \$93	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$81	Fuel System Monitor Bank 1	\$91	UNDOCUMENTED OBDMID: \$81 TID: \$91	PASS	343.2 (\$0D68)	207.2 (\$0818)	698.8 (\$1B4C)	us
\$81	Fuel System Monitor Bank 1	\$92	UNDOCUMENTED OBDMID: \$81 TID: \$92	PASS	350.8 (\$0DB4)	207.2 (\$0818)	698.8 (\$1B4C)	us

\$81	Fuel System Monitor Bank 1	\$93	UNDOCUMENTED OBDMID: \$81 TID: \$93	PASS	330.0 (\$0CE4)	207.2 (\$0818)	698.8 (\$1B4C)	us
\$81	Fuel System Monitor Bank 1	\$94	UNDOCUMENTED OBDMID: \$81 TID: \$94	PASS	347.2 (\$0D90)	207.2 (\$0818)	698.8 (\$1B4C)	us
\$81	Fuel System Monitor Bank 1	\$99	UNDOCUMENTED OBDMID: \$81 TID: \$99	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$81	Fuel System Monitor Bank 1	\$9E	UNDOCUMENTED OBDMID: \$81 TID: \$9E	PASS	-0.29 (\$FFFFFE3)	-6.00 (\$FFFFDA8)	5.01 (\$01F5)	deg
\$82	Fuel System Monitor Bank 2	\$95	UNDOCUMENTED OBDMID: \$82 TID: \$95	PASS	344.8 (\$0D78)	207.2 (\$0818)	698.8 (\$1B4C)	us
\$82	Fuel System Monitor Bank 2	\$96	UNDOCUMENTED OBDMID: \$82 TID: \$96	PASS	328.8 (\$0CD8)	207.2 (\$0818)	698.8 (\$1B4C)	us
\$82	Fuel System Monitor Bank 2	\$97	UNDOCUMENTED OBDMID: \$82 TID: \$97	PASS	342.0 (\$0D5C)	207.2 (\$0818)	698.8 (\$1B4C)	us
\$82	Fuel System Monitor Bank 2	\$98	UNDOCUMENTED OBDMID: \$82 TID: \$98	PASS	322.0 (\$0C94)	207.2 (\$0818)	698.8 (\$1B4C)	us
\$85	Boost Pressure Control Monitor Bank 1	\$91	UNDOCUMENTED OBDMID: \$85 TID: \$91	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$85	Boost Pressure Control Monitor Bank 1	\$93	UNDOCUMENTED OBDMID: \$85 TID: \$93	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$85	Boost Pressure Control Monitor Bank 1	\$94	UNDOCUMENTED OBDMID: \$85 TID: \$94	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$85	Boost Pressure Control Monitor Bank 1	\$96	UNDOCUMENTED OBDMID: \$85 TID: \$96	PASS	90.1 (\$0143)	23.0 (\$FFFFFFCE)	5438.5 (\$7554)	°F
\$85	Boost Pressure Control Monitor Bank 1	\$98	UNDOCUMENTED OBDMID: \$85 TID: \$98	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$85	Boost Pressure Control Monitor Bank 1	\$99	UNDOCUMENTED OBDMID: \$85 TID: \$99	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$85	Boost Pressure Control Monitor Bank 1	\$9A	UNDOCUMENTED OBDMID: \$85 TID: \$9A	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$98	NOx Catalyst Monitor Bank 1	\$90	UNDOCUMENTED OBDMID: \$98 TID: \$90	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$98	NOx Catalyst Monitor Bank 1	\$91	UNDOCUMENTED OBDMID: \$98 TID: \$91	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$A2	Misfire Cylinder 1 Data	\$0B	EWMA MISFIRE DRIVE CYC 1	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A2	Misfire Cylinder 1 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A3	Misfire Cylinder 2 Data	\$0B	EWMA MISFIRE DRIVE CYC 2	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A3	Misfire Cylinder 2 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A4	Misfire Cylinder 3 Data	\$0B	EWMA MISFIRE DRIVE CYC 3	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A4	Misfire Cylinder 3 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A5	Misfire Cylinder 4 Data	\$0B	EWMA MISFIRE DRIVE CYC 4	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A5	Misfire Cylinder 4 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A6	Misfire Cylinder 5 Data	\$0B	EWMA MISFIRE DRIVE CYC 5	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A6	Misfire Cylinder 5 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A7	Misfire Cylinder 6 Data	\$0B	EWMA MISFIRE DRIVE CYC 6	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A7	Misfire Cylinder 6 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A8	Misfire Cylinder 7 Data	\$0B	EWMA MISFIRE DRIVE CYC 7	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A8	Misfire Cylinder 7 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#

\$A9	Misfire Cylinder 8 Data	\$0B	EWMA MISFIRE DRIVE CYC 8	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$A9	Misfire Cylinder 8 Data	\$0C	CURR OBD TRIP MISFIRE COUNTS	PASS	0 (\$0000)	0 (\$0000)	65535 (\$FFFF)	#
\$B2	PM Filter Monitor Bank 1	\$90	UNDOCUMENTED OBDMID: \$B2 TID: \$90	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$B2	PM Filter Monitor Bank 1	\$91	UNDOCUMENTED OBDMID: \$B2 TID: \$91	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$B2	PM Filter Monitor Bank 1	\$92	UNDOCUMENTED OBDMID: \$B2 TID: \$92	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A
\$B2	PM Filter Monitor Bank 1	\$93	UNDOCUMENTED OBDMID: \$B2 TID: \$93	INCOMPLETE	N/A (\$0000)	N/A (\$0000)	N/A (\$0000)	N/A

Mode \$09 Test Results

Acronym	Name	Value
BPCOMP	Boost Pressure Monitor Completion Condition Counts	?
BPCOND	Boost Pressure Monitor Conditions Encountered Counts	?
CALID1	Calibration ID #1	DDCH3C3.H32
CALID2	Calibration ID #2	BC3A-14D609-BA
CALID3	Calibration ID #3	DC3A-14F553-AA
CALID4	Calibration ID #4	DC3A-14G265-AC
CVN1	Calibration Verification #1	\$4B224A55
CVN2	Calibration Verification #2	\$0885FD1F
CVN3	Calibration Verification #3	\$000009AE
CVN4	Calibration Verification #4	\$00005715
ECUNAME	ECU Name	ECM-EngineControl
EGRCOMP	EGR and/or VVT Monitor Completion Condition Counts	?
EGRCOND	EGR and/or VVT Monitor Conditions Encountered Counts	?
EGSCOMP	Exhaust Gas Sensor Monitor Completion Counts	?
EGSCOND	Exhaust Gas Sensor Monitor Conditions Encountered Counts	?
ENGINE_SERIAL_NUM	Engine Serial Numer	11161101130406701
FUELCOMP	Fuel Monitor Completion Condition Counts	?
FUELCOND	Fuel Monitor Conditions Encountered Counts	?
HCCATCOMP	NMHC Catalyst Monitor Completion Counts	?
HCCATCOND	NMHC Catalyst Monitor Conditions Encountered Counts	?
IGNCNTR	Ignition Cycle Counter	3059
NADSCOMP	NOx Adsorber Monitor Completion Condition Counts	?
NADSCOND	NOx Adsorber Monitor Conditions Encountered Counts	?
NCATCOMP	NOx/SCR Catalyst Monitor Completion Condition Counts	?
NCATCOND	NOx/SCR Catalyst Monitor Conditions Encountered Counts	?

OBDCOND	OBD Monitoring Conditions Encountered Counts	1280
PMCOMP	PM Filter Monitor Completion Condition Counts	?
PMCOND	PM Filter Monitor Conditions Encountered Counts	?
VIN	Vehicle Identification Number	1FT7W2BT2DEA61696

Snap Shot Data
No Snapshot Data Present

Vehicle Notes

Record Notes

Exhaust Gas Analyzer Minimum/Maximum Values

	HC (ppm)	CO (%)	CO2 (%)	O2 (%)	NOx (ppm)	AF (:1)	L
Minimum:	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maximum:	N/A	N/A	N/A	N/A	N/A	N/A	N/A